## Appendix F Updated Table 1 - Biological Resources Assessment

Table 1 — Listed and Special-Status Species Potentially Occurring on or in the Vicinity of the Deer Creek Flow Enhancement Program Site in Tehama County, CA.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Plants				
Adobe lily Fritillaria pluriflora	;; -1B	Generally occurs on heavy clay soils within chaparral, cismontane woodland, and valley and foothill grassland habitats.	February - April	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Ahart's paronychia Paronychia ahartii	;; 1B	Typically occurs on well-drained, thin soils, in a variety of environments including cismontane woodland, valley and foothill grassland, and vernal pool margins.	March-June	No. No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Baker's Navarretia Navarretia leucocephala ssp. bakeri	;;1B	Cismontane woodland, lower montane coniferous forest, meadows, seeps, and grasslands from 50 to 5,200 feet above MSL.	May - July	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Boggs Lake hedge- hyssop Gratiola heterosepala	; ; 1B	Marshes and swamps; vernal pools.	April-August	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Brown Fox Sedge Carex vulpinoidea	;;2	Marshes, swamps, and riparian woodlands within the northern Central Valley and southern California.	May-June	No. Not observed during survey. Most "wet" areas are concrete lined.
Butte County checkerbloom Sidalcea robusta	;;; 1B (Butte County Endemic)	Rocky and brush-covered slopes on Tuscan Formation mud flow, typically within chaparral, and cismontane woodland environments.	April-June	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Butte County meadowfoam Limnanthes floccosa ssp. californica	FE; CE;; 1B (Butte County Endemic)	Mesic valley and foothill grasslands and vernal pools in elevations ranging from approximately 160 to 3,050 feet above MSL.	March-May	<b>No.</b> No suitable habitat occurs in the study areas.
Butte County Morning Glory Calystegia atriplicifolia ssp. buttensis	;;1B	Chapparal and lower montane coniferous forest; Sometimes roadsides between 600-1524 meters.	May-July	No. No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Plants (continued)				
California beaked-rush  Rhynchospora  californica	;;;1B	Bogs, fens, meadows, seeps, and freshwater marshes and swamp habitats.	May-July	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
California satintail Imperata brevifolia	; ; 2	Monocot occurring in meadows and seeps, chaparral, and riparian scrub. Ranges widely across California.	SeptMay	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Dwarf Downingia  Downingia pusilla	;;2	Vernal pools.	Mar-May	<b>No.</b> No suitable habitat occurs in the study areas.
Ferris milk-vetch Astragalus tener var. ferrisiae	;;1B	Meadows and seeps, valley and foothill grasslands from 20 to 230 feet above MSL.	April - May	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Flagella-like atractylocarpus Atractylocarpus flagellaceus	;;2	(A bryophyte/moss found in) Cismontane woodland between 100 and 500 meters elevation.	Year round	<b>No.</b> No suitable habitat occurs in the study areas.
Greene's Tuctoria Tuctoria greenei	FE;;;1B	Vernal pools between 30-1070 meters.	May-Jul(Sept)	<b>No.</b> No suitable habitat occurs in the study areas.
Hairy Orcutt Grass Orcuttia pilosa	FE;;;1B	Vernal pools, typically ones with long inundation periods.	May-Sept	<b>No.</b> No suitable habitat occurs in the study areas.
Henderson's Bent Grass  Agrostis hendersonii	;;3	Vernal pools within valley and foothill grasslands between 70 and 305 meters elevation.	Apr-May	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Hoover's Spurge Chamaesyce hooveri	FT;;;1B	Vernal pools.	Jul-Sept (Oct)	<b>No</b> . No suitable habitat occurs in the study areas.
Legenere Legenere limosa	;;1B	Vernal pools.	April-June	<b>No</b> . No suitable habitat occurs in the study areas.
Norris' Beard Moss  Didymodon norrisii	;;2	(A bryophyte/moss found in) Cismontane woodland; Lower montane coniferous forest/intermittently mesic, rock between 600 and 1973 meters	Year round	No. No suitable habitat occurs in the study areas.
Pink Creamsacs Castilleja rubicundula ssp. rubicundula	; ; 1B	Meadows and seeps; valley foothill grasslands.	April-June	No. No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Red Bluff Dwarf Rush  Juncus leiospermus var.  leiospermus	;; 1B	Vernally mesic areas within chaparral, cismontane woodland, meadows, seeps, valley and foothill grassland, and vernal pool environments.	March-May	No. No suitable habitat occurs in the study areas.
Round-leaved filaree California macrophylla	;; 1B	Valley and foothill grassland in friable clay soils.	March-May	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Sanford's arrowhead Sagittaria sanfordii	;;1B	Assorted shallow freshwater marshes and swamps.	May - October	<b>No</b> . Not observed during site survey.
Silky Cryptantha Cryptantha crinita	;;1B	Foothill Woodland, Yellow Pine Forest, Valley Grassland between 61 and 1215 meters.	April-May	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Slender Orcutt Grass Orcuttia tenuis	FT;;;1B	Vernal pools, typically ones with long inundation periods.	May-Sept	<b>No.</b> No suitable habitat occurs in the study areas.
Stony Creek Spurge  Chamaesyce ocellata  ssp. rattanii	;;1B	Chapparal; Valley and foothill grassland between 80 and 850 meters.	May-October	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Veiny Monardella  Monardella douglasii  ssp. venosa	;;1B	Cismontane woodland, valley and foothill grassland, heavy clay soils from 200 to 1,200 feet above MSL.	May - July	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
White-stemmed clarkia  Clarkia gracilis ssp.  albicaulis	;; SLC; 1B	Often occurs on road cuts, openings, dry brushy slopes, and sometime in serpentine soils within chaparral, and cismontane woodland habitats.	May-July	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Woolly rose-mallow Hibiscus lasiocarpus	; ; 2	Marshes and swamps.	June-Sept	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Invertebrates				
Antioch Dunes Anthicid Beetle Anthicus sacramento	;;	Interior sand dunes and sand bars.	Year-round; adults collected in June-July	<b>No.</b> No suitable habitat occurs in the study areas. All potential well sites are highly disturbed.
Conservancy fairy shrimp Branchinecta conservatio	FE;;;	Vernal pools, swales, and ephemeral freshwater habitat. Typically occur in large, deep, turbid, long- standing pools.	Identified through UFWS protocol-level wet-season sampling and/or dry season cyst identification.	No. No suitable habitat occurs in the study areas.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Valley Elderberry Longhorn Beetle <i>Desmocerus</i> californicus dimorphus	FT;;;	Associated with its host plant elderberry shrubs (Sambucus spp.).	Best observed February through April.	Low. Several shrubs occur within 100 feet of potential well A2 Edson Property, but they are isolated and show no evidence of beetle occurrence.
Vernal Pool Fairy Shrimp Branchinecta lynchi	FT;;;	Vernal pools, swales, and ephemeral freshwater habitat.	Identified through UFWS protocol-level wet-season sampling and/or dry season cyst identification.	No. No suitable habitat occurs in the study areas.
Vernal Pool Tadpole Shrimp Lepidurus packardi	FE;;;	Vernal pools, swales, and ephemeral freshwater habitat.	Identified through UFWS protocol-level wet-season sampling and/or dry season cyst identification.	<b>No.</b> No suitable habitat occurs in the study areas.
Amphibians/Reptiles				
California Red-legged Frog Rana aurora draytonii	FT; CSC;;	Requires a permanent water source and is typically found along quiet slow moving streams, ponds, or marsh communities with emergent vegetation.	Optimal detection is through aquatic sampling during the summer months, but care should be taken to apply a level of effort and to use a style of surveying appropriate to the site.	No. No suitable habitat occurs in the study areas. No Known populations within Tehama County
California Newt  Taricha torosa	;CSC;;	Oak woodlands and grasslands adjacent to water. Utilizes animal burrows for denning	Year-round	<b>No.</b> No suitable habitat occurs in the study areas.
Giant Garter Snake Thamnophis gigas	FT; CT;;	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	April-October; Over-winters/ hibernates subsurface during November - March	No. No suitable habitat occurs in the study areas.
Gopher Snake Pituophis melanoleucus	;CSC;;	Known to occur in varying habitats including woodlands and grasslands.	Year-round	Known. Gopher snakes are known to occur throughout the study area.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Northwestern Pond Turtle Actinemys marmorata marmorata	;CSC;;	Found in permanent or near-permanent ponds, backwaters, or slow- moving streams. Prefers areas with basking sites.	Year-round	<b>No.</b> No suitable habitat occurs in the study areas.
Western Spadefoot Toad Spea hammondii	; CSC;;	Breeds in seasonal wetlands such as vernal pools. Requires upland refugia such as small mammal burrows during dry months.	Most easily found during breeding season when seasonal pools are filled.	No. No suitable habitat occurs in the study areas.
Fish				
Central Valley Spring- run Chinook salmon Oncorhynchus tshawytscha	FT; CSC;;	Sacramento and San Joaquin Rivers and their tributaries.	Spring run	Known. Salmon occur in Deer Creek however there will be no impacts within the creek.
Central Valley Winter- run Chinook Salmon Oncorhynchus tshawytscha	FE; CSC;;	Mainstem of the Sacramento River and some tributaries.	Winter run	No. No suitable habitat occurs in the study areas.
Central Valley Steelhead Oncorhynchus mykiss	FT;;;	Coastal basins from the Russian River, south to Soquel Creek, and San Francisco and San Pablo Bay basins. Excludes the Sacramento-San Joaquin River basins.	Year-round	Known. Steelhead occur in Deer Creek however there will be no impacts within the creek.
Delta Smelt  Hypomesus  transpacificus	FT; CT;;	Sacramento and San Joaquin Rivers and their tributaries.	Year-round	No. No suitable habitat occurs in the study areas.
Green Sturgeon Acipenser medirostris	FT;;	Sacramento and San Joaquin Rivers and their tributaries.	Year-round	<b>No.</b> No suitable habitat occurs in the study areas.
Birds				
Bald Eagle Haliaeetus leucocephalus	FPD; CE (fully protected);; - (Nesting and Wintering)	Nesting restricted to the mountainous communities near permanent water sources. Winters throughout most of California at lakes, reservoirs, river systems, and coastal wetlands.	Year-round	No. No suitable habitat occurs in the study areas.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Bank Swallow <i>Riparia riparia</i>	;CT;;	Builds nesting colonies in steep sandy river banks.	April-Aug; neo- tropical migrant	<b>No.</b> No suitable habitat occurs in the study areas.
Bewicks Wren Thryomanes bewickii	;CSC;;	Riparian and oak woodlands.	Year-round	<b>High.</b> Suitable habitat occurs throughout the study area.
Common Yellowthroat  Geothlypis trichas	;CSC;;	Fresh emergent wetlands.	April-Aug; neo- tropical migrant	<b>No.</b> No suitable habitat occurs in the study areas.
Golden Eagle Aquila chrysaetos	;CFP ; ;	Nests on large cliffs and rarely in trees. Forages in grasslands and seasonal marshes.	Year-round	No. No suitable habitat occurs in the study areas.
Grasshopper Sparrow  Ammodramus  savannarum	;CSC;;	Dry, dense grasslands, especially native grasslands with a mix of grasses, forbs, and scattered shrubs for perches.	April-Aug; neo- tropical migrant	<b>High.</b> Suitable habitat occurs throughout the study area.
Great Blue Heron Ardea herodias	MBTA;;; (rookery)	Forms rookeries in large trees typically adjacent to large rivers.	Year-round	<b>No</b> . No suitable habitat occurs in the study areas.
Great Egret  Ardea alba	MBTA;;; (rookery)	Forms rookeries in large trees typically adjacent to large rivers.	Year-round	<b>No.</b> No suitable habitat occurs in the study areas.
Greater White-fronted Goose Anser albifrons	;CSC;;	Winters in California. In marshes and seasonal wetlands, also utilizes agricultural fields such as rice, wheat and corn	September - March	<b>No.</b> No suitable habitat occurs in the study areas.
Hutton's Vireo Vireo huttoni	;CSC;;	Valley foothill woodlands including riparian forests.	April-Aug; neo- tropical migrant	Moderate. Suitable habitat occurs throughout the study area.
Loggerhead Shrike  Lanius ludovicianus	FE;CSC;;	Open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover	April-Aug; neo- tropical migrant	Low. Marginal habitat occurs adjacent to Deer Creek.
Long-eared Owl Asio otus	;CSC;;	Riparian habitat required; also uses live oak thickets and other dense stands of trees.	Year-round	Moderate. Suitable habitat occurs throughout the study area.
Marsh Wren Cistothorus palustris	;CSC;;	Fresh emergent wetlands.	April-Aug; neo- tropical migrant	<b>No.</b> No suitable habitat occurs in the study areas.
Northern Harrier Circus cyaneus	;CSC;;	Typically inhabits marshes, oak savannahs, wetlands, or grasslands.	Year-round	<b>Present</b> . Observed foraging adjacent to the RW-2 Knox Well site.
Olive-sided Flycatcher Contopus cooperi	;CSC;;		April-Aug; neo- tropical migrant	Moderate. Suitable habitat occurs throughout the study area.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Osprey Pandion haliaetus	;CFP;;	Year –round resident near fresh or salt water; eats mostly fish. Builds large visible stick nests often on powerline poles and other man-made structures.	Year-round	No. No suitable habitat occurs in within the test drill locations. Suitable habitat occurs within the Deer Creek riparian corridor.
Purple Martin Progne subis	;CSC;;	Oak woodlands, coniferous forests and riparian habitat from sea level to approximately 6000 feet	April-Aug; neo- tropical migrant	<b>High.</b> Suitable habitat occurs throughout the study area.
Red-winged Blackbird Agelaius phoeniceus	; CSC;;	Nest in dense cattail, blackberry, tules, willow, or wild rose within emergent wetlands throughout the Central Valley and foothills surrounding the valley.	April-Aug; neo- tropical migrant	No. No suitable habitat occurs in the study areas.
Sandhill Crane Grus canadensis	; CFP;	Winters in Central Valley. Utilizes open grassland seasonal wetlands and agricultural land.	September - March	No. No suitable habitat occurs in the study areas.
Savannah Sparrow Passerculus sandwichensis	;CSC;;	Grasslands and emergent wetlands. Common along coastal California, rare in Central Valley.	April-Aug; neo- tropical migrant	No. No suitable habitat occurs in the study areas. Not likely to occur
Short-eared Owl  Asio flammeus	;CSC;;	Open fields, meadows and marshes.	Year-round	Moderate. Suitable habitat occurs throughout the study area.
Song Sparrow Melospiza melodia	;CSC;;	Riparian forests and associated woodlands.	April-Aug; neo- tropical migrant	<b>High.</b> Suitable habitat occurs throughout the study area.
Spotted Towhee Pipilo maculatus	;CSC;;	Chaparral thickets and oak woodlands.	April-Aug; neo- tropical migrant	Moderate. Suitable habitat occurs throughout in riparian woodlands adjacent to Deer Creek.
Swainson's Hawk  Buteo swainsoni	; CT; (Nesting)	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat (agricultural fields, grasslands, etc.).	March 20 -April 20 and June 10- July 30 optimum to locate nests; resident March- Sept	Low. Documented occurrence within 5-miles of site; although nest sites are not "active" and latest documented occupied nest within 5 miles was in 1996.
Tricolored blackbird  Agelaius tricolor	; CSC;; (Nesting Colony)	Nest in dense cattail, blackberry, tules, willow, or wild rose within emergent wetlands throughout the Central Valley and foothills surrounding the valley.	Year-round	No. No suitable habitat occurs in the study areas.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Western burrowing owl Athene cunicularia hypugaea	; CSC;; (Burrow Sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open valley and foothill grassland and desert habitat.	Year-round	Low. Some potential for occurrence within 500-feet of well sites, but marginal habitat occurs. Not observed during survey.
Western Yellow-billed Cuckoo  Coccyzus americanus occidentalis	FC; CE;; (Nesting)	Nests in valley, foothill, and desert, riparian communities with dense understory foliage.	April-Aug; neo- tropical migrant	No. Marginal habitat occurs within riparian habitat adjacent to Deer Creek
White-tailed kite Elanus leucurus	;CFP;;	Fairly common in grasslands, farmlands, even highway median strips.	Year-round	Low. Potential for the species to nest in adjacent mature trees and utilize general study areas for foraging. Not known to occur within survey areas. Not observed during surveys.
Willow Flycatcher Empidonax traillii	FE;CE;;	Wet meadows and montane riparian habitats with dense willow thickets.	April-Aug; neo- tropical migrant	No. No suitable habitat occurs in the study areas.
Yellow-breasted Chat Icteria virens	;CSC;;	Inhabits dense thickets and brush. Nests along streams and rivers.	April-Aug; neo- tropical migrant	No. Potential for the species to forage in general study areas; although, routine disturbance from agriculture activities and fragmented habitat would preclude the species nesting proximal to potential well sites. Not observed during surveys.
Yellow-headed Blackbird Xanthocephalus xanthocephalus	; CSC;;	Nest in dense cattail, blackberry, tules, willow, or wild rose within emergent wetlands throughout the Central Valley and foothills surrounding the valley.	April-Aug; neo- tropical migrant	No. No suitable habitat occurs in the study areas.
Yellow warbler Dendroica petechia brewsteri	;CSC;;	Favors wet habitats, especially willows and alders; open woodlands, gardens, and orchards.	April-Aug; neo- tropical migrant	Low. Some potential for the species to nest in adjacent trees or brush, and utilize general study areas for foraging; although, routine disturbance from agriculture activities might preclude the species nesting near several potential well sites.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Raptors (Hawks, Owls and Vultures), and Other Migratory Birds	MBTA(Migrat ory Bird Treaty Act); §3503.5 DFG Code	Nest in a variety of communities including cismontane woodland, mixed coniferous forest, chaparral, montane meadow, riparian, and urban communities.	Most nesting raptors are found in larger mature trees but some nest on the ground.	Present. Turkey vulture, red- tailed hawk, northern harrier, and American kestrel observed during survey. Trees adjacent to potential well sites present nesting opportunities; although, no existing nests were observed within 500-feet during surveys.
Mammals				
Dusky-footed Woodrat  Neotoma fuscipes	;CSC ; ;	Coniferous forests and oak woodlands	Year-round	<b>None.</b> No suitable habitat was observed in the study areas.
Hoary Bat Lasiurus cinereus	;CSC ; ;	Occurs widely across California in many habitat types. The species prefers areas containing heavy tree cover for roosting and adjacent open areas for foraging.	Feb-Sept; migrates seasonally	Low. Marginal habitat within the riparian corridor associated with Deer Creek.
Mountain Lion Felis concolor	;CSC;;	Common throughout California in valleys, foothills and mountains.	Year-round	<b>High.</b> Suitable habitat occurs throughout the study area.
Northern River Otter  Lontra canadensis	;CSC ; ;	Rivers, large streams, lakes and wetlands.	Year -round	<b>High.</b> Likely within Deer Creek.
Pallid bat Antrozous pallidus	;CSC ; ;	Widespread throughout California except the high Sierra Nevada mountain range from Shasta to Kern Counties. The species is most common in dry, open areas with rocky areas for roosting.	Year round in most of range	<b>None.</b> No suitable roosting habitat was observed in the study areas.
Ringtail Bassariscus atutus	;CFP;;	Chaparral, rocky hillsides and riparian forests.	Year-round	<b>High.</b> Likely within the riparian corridor associated with Deer Creek.
Spotted Bat	;CSC;;	Occupies arid desert, grassland, and mixed conifer forests. Utilizes rock crevices, cliffs, caves and buildings. (sea level- 3000 meters)	Year-round	Moderate. Suitable habitat occurs throughout the study area.
Townsend's Big-eared Bat Corynorhinus townsendii	;CSC;;	Found in coniferous forests, deserts, riparian forests, and coastal areas from sea level to approximately 6,000 feet	Year-round; Makes seasonal migrations in California.	<b>None.</b> No suitable roosting habitat was observed in the study areas.
Vagrant Shrew Sorex vagrans	;CSC;;	Valley foothill riparian forests, wet meadows and perennial grasslands below 3,700 feet.	Year-round.	<b>High.</b> Suitable habitat occurs throughout the study area.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification Period	Potential for Occurrence
Western Mastiff Bat Eumops perotis californicus	;CSC;	The range of this subspecies is principally southwest desert regions of the United States, along the border with Mexico; however, the range extends as far north on the Pacific coast to Alameda County, California.	Year-round	None. No suitable roosting habitat was observed in the study areas.
Western Red Bat Lasiurus cinereus	;CSC;;	Found in a variety of habitats throughout the western U.S. Often observed foraging in riparian corridors.	Year-round	Moderate. Suitable roosting habitat was observed in the study areas.
Federally Listed	Species:	California State Listed Species:		CNPS* List Categories:
FE = federal endangered	FC = candidate	CE = California state endangered	CSC = California Species of Special Concern	1A = plants presumed extinct in California
FT = federal threatened	PT = proposed threatened	CT = California state threatened	CFP = California Fully Protected	1B = plants rare, threatened, or endangered in California and elsewhere
FD = delisted	FPD = proposed for delisting	CR = California state rare		<ul> <li>2 = plants rare, threatened, or endangered in California, but common elsewhere</li> <li>3 = plants about which we need more information</li> <li>4 = plants of limited distribution</li> </ul>